



Docket No.: 204552021500  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Tetsuya HANAMOTO

Application No.: 09/957,472

Confirmation No.: 4058

Filed: September 21, 2001

Art Unit: 2815

For: SEMICONDUCTOR LIGHT-EMITTING  
DEVICE AND LIGHT-EMITTING DISPLAY  
THEREWITH

Examiner: J. Jackson

**DECLARATION OF TETSUYA HANAMOTO UNDER 37 CFR 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313

Sir:

I, Tetsuya HANAMOTO, residing at 2-133-401 Edagawa-cho Nishinomina-shi, Hyogo prefecture, Japan (Post Code: 663-8143), hereby declare under penalty of perjury as follows:

1. I majored in applied chemistry at Himeji Institute of Technology and was qualified as an engineering master at the Himeji Institute of Technology.

2. Since 1985, I have been employed by SHARP KABUSHIKI KAISHA. During that time, I have worked in the following areas:

from May 13, 1985 to October 1, 1988, I worked in the area of hybrid IC development in the Electronic Components Group of the Electronic Components Division;

from October 1, 1988 to April 1, 1991, I work in the area of thin film magnetic head development in the Electronic Components Group of the Opto-Electronic Devices Lab;

from April 1, 1991 to May 16, 1993, I work in the areas of developing light emitting devices and light emitting-detecting devices that use molded interconnection device methods, monolithic type light emitting devices and light emitting-detecting devices, injection molding method technology of resin development, and optical multilayer film in the Electronic Components Group of the Opto-Electronic Devices Labs;

from May 16, 1993 to August 1, 1997, I work in the areas of compound semiconductors, electronic components, and opto-electronic devices patent development in the Electronic Components Group of the Opto-Electronic Devices Lab;

from August 1, 1997 to June 16, 2005, I worked in the areas of nitride compound semiconductor devices, fluorescent material, optical transmission, high frequency components, organic light emitting diode, semiconductor laser, and light emitting diode patent development in the Electronic Components Group of the Opto-Electronic Devices Lab;

from June 16, 2005 to July 16, 2005, I worked in the area of blue and blue-purple light emitting diode development in the Electronic Components Group of the Compound Semiconductor Division Advanced Technology Development Project Team; and

from July 16, 2005 to present, I have worked in the area of blue, blue-purple and white light emitting diode development in Electronic Components Group.

3. I have read and am familiar with the Office Action mailed April 6, 2005. I have also read and am familiar with both the PHOSPHOR HANDBOOK and USP 5,813,753 to Vriens.

4. I am presenting this declaration to show that neither the PHOSPHOR HANDBOOK nor Vriens teach or suggest a semiconductor light-emitting element with outgoing light having an emission wavelength of 390 to 420 nm.

5. The present invention includes a semiconductor light-emitting element that has outgoing light having an emission wavelength of 390 to 420 nm. Light within this wavelength range is lower in visibility and therefore better in color purity than light above this range, that is, light above 420 nm.



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6. The PHOSPHOR HANDBOOK does not teach or suggest that the fluorescent substances described therein effectively emit light when they are illuminated with light having a wavelength of 390 to 420 nm. Although the PHOSPHOR HANDBOOK does disclose some of the fluorescent substances of the present invention, even if an extra-high pressure mercury lamp having the longest wavelength is used, the excitation wavelength would be 390 nm at most. The PHOSPHOR HANDBOOK fails to disclose that desired light such as red, green or blue is emitted when the fluorescent substances are excited with light having a wavelength of 390 to 420 nm.

7. Vriens only teaches that light having a wavelength of 390 nm or more is used to suppress deterioration of resin. Vriens does not, however, disclose that the fluorescent substances effectively emit light by illuminating the fluorescent substances with light of the wavelength of 390 nm or more. Vriens also fails to teach or suggest that the range of excitation wavelength which range is limited by the combination of the illuminating light and the fluorescent substances. Thus, the combination of Vriens and the PHOSPHOR HANDBOOK fails to teach or suggest the features of the claimed invention. Further, neither Vriens nor the PHOSPHOR HANDBOOK would suggest the claimed invention to one of ordinary skill in the art.

8. I further declare that all statements made herein of my own knowledge are true and that all statement made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 2005/10/16By: Tetsuya Hanamoto  
Tetsuya Hanamoto